

REMARKS

The application is believed to be in condition for allowance because the claims are novel and non-obvious over the cited art. The following paragraphs provide the justification for these beliefs. In view of the following reasoning for allowance, the applicants hereby respectfully request further examination and reconsideration of the subject application.

The 35 USC 103 Rejection of 1-3, 7, 9-12, 14, 15, 20, 21 and 55-56.

Claims 1-3, 7, 9-12, 14, 15, 20, 21 and 55-56 were rejected under 35 USC 103(a) as being unpatentable over Ippolito et al, U.S. Patent No. 6,072,522, herein after referred to as Ippolito, in view of Taylor, U.S. Patent No. 7,113,201(herein after Taylor). The Examiner stated that Ippolito teaches the applicants' claimed invention, but does not teach that the server is not only capable of broadcasting the sub-events, but also of recording the captured sub-events. However, the Examiner further contended that Taylor teaches this feature, rendering the applicants' claimed invention obvious. The applicants respectfully traverse this contention of obviousness.

In order to deem the applicants' claimed invention unpatentable under 35 USC 103, a prima facie showing of obviousness must be made. To make a prima facie showing of obviousness, all of the claimed elements of an applicant's invention must be considered, especially when they are missing from the prior art. If a claimed element is not taught in the prior art and has advantages not appreciated by the prior art, then no prima facie case of obviousness exists. The Federal Circuit court has stated that it was error not to distinguish claims over a combination of prior art references where a material limitation in the claimed system and its purpose was not taught therein (*In Re Fine*, 837 F.2d 107, 5 USPQ2d 1596 (Fed. Cir. 1988)).

The applicants claim a Distributed Meeting (DM) system that provides high quality two-way conferencing and recording of meetings, as well as rich browsing of archived meetings enhanced through a number of analysis techniques. The system

uses a variety of capture devices (360° omni-directional camera, whiteboard camera, presenter view camera, remote view camera, microphone devices and arrays and a graphics capture device) to give a rich experience to local and remote meeting participants. These capture devices are all synchronized to provide an integrated, scalable system and method for two-way conferencing, broadcasting, recording and viewing meetings or other events. Archived meetings can be quickly viewed using speaker filtering, spatial indexing, time compression and a number of analysis tools. In general, the DM system and method not only records notes and drawings on the whiteboard, but also captures 360° video and audio. The DM system is designed to support remote viewing and participation in meetings as they occur and viewing of meetings after they have finished (Summary).

As discussed previously, the DM system and method can be used for broadcasting a meeting to one or more remote clients; recording a meeting; and browsing of a recording of a meeting. **The DM system has multiple cameras of different types that simultaneously capture different sub-events occurring in a space where an event occurs, such as a meeting room. The cameras can include a 360-degree camera centrally positioned to monitor in 360 degrees the space in which the event occurs; a remote view camera positioned so as to capture a view of event participants in the meeting room; a presenter view camera positioned so as to capture a view of the front of the meeting room where a presenter is typically presenting; and a whiteboard capture camera positioned so as to capture strokes written on a whiteboard. The cameras can be used in various combinations.** (Summary)

The DM system and method can also include a virtual director module that automatically switches between the aforementioned cameras of different types to display a meeting-appropriate view of a speaker or other meeting data. The view displayed can also be manually set by a user. (Summary)

In contrast, Ippolito discloses a video conferencing apparatus for facilitating a video conference involving a group of participants who are azimuthally located about the apparatus. Ippolito's invention identifies a principle speaker via electronic processing of audio signals generated by the group participants and positions of the video camera so as to capture the image of the principle speaker through electromechanical means. (Abstract) In Ippolito all cameras of the 360 degree camera are of the same type and generally capture the same type of image (a frontal view of a speaking meeting participant). **Ippolito does not, however, teach the applicant's claimed multiple cameras of different types simultaneously capturing images of sub-events occurring in a space associated with an event. Nor does Ippolito teach a virtual director that determines which view of the multiple cameras of different types to display, and switches between the multiple cameras of different types to display a view of one of the different sub-events.**

Granted, the Examiner states that the circuit board 250 is a virtual director, but this circuit board only helps in selecting one of the cameras of the same type that create the 360 degree camera taught in Ippolito. The circuit board 250 does not select between different types of cameras to determine which view to display.

Taylor teaches an image processing apparatus where image data from a plurality of cameras capture the movements of a number of people, for example in a meeting, and sound data from a directional microphone array is processed by a computer processing apparatus to archive the data in a meeting archive database. **The image data captured is processed to determine the three-dimensional position and orientation of each person's head and to determine at whom each person is looking.** The sound data is processed to determine the direction from which the sound came. Processing is carried out to determine who is speaking by determining which person has his head in a position corresponding to the direction from which the sound came. Having determined which person is speaking, the personal speech recognition parameters for that person are selected and used to convert the sound data to text data. Image data to be archived is chosen by

selecting the camera which best shows the speaking participant and the participant to whom he is speaking. Image data, sound data, text data and data defining at whom each person is looking is stored in the meeting archive database. (Abstract)

Taylor does not, however, teach the applicant's claimed multiple cameras of different types simultaneously capturing images of sub-events occurring in a space associated with an event. In Taylor all the cameras are of the same type positioned so as to determine the positions of the meeting participants. **Nor does Taylor teach a virtual director that determines which view of the multiple cameras of different types to display, and automatically switches between the multiple cameras of different types to display a view of one of the different sub-events.** In Taylor only a far view of the speaking meeting participant and to whom they are speaking is recorded. Most of the people speaking will be captured from behind as is evidenced from the positions of the cameras relative to the majority of the meeting participants (see FIG. 1). No close up frontal views of a speaker can be displayed; no views specifically optimized to be transmitted to a remote participant can be displayed; and no whiteboard camera views can be displayed.

Since neither Ippolito nor Taylor teaches the applicant's claimed **multiple cameras of different types simultaneously capturing images of sub-events occurring in a space associated with an event; or a virtual director that determines which view of the multiple cameras of different types to display, and switches between the multiple cameras of different types to display a view of one of the different sub-events**, the combination does not teach it. Thus, the applicants have claimed elements not taught in the cited art and which have advantages not recognized therein. Accordingly, no prima facie case of obviousness has been established in accordance with the holding of *In Re Fine*. This lack of prima facie showing of obviousness means that the rejected claims are patentable under 35 USC 103 over Ippolito in view of Taylor. It is, therefore, respectfully requested that the rejection of Claims 1-3, 7, 9-12, 14, 15, 20, 21 and

55-56 be reconsidered based on the novel and non-obvious claim language, as amended:

"An automated system for capturing and viewing an event having event participants, comprising: multiple cameras of different types simultaneously capturing images of sub-events occurring in a space associated with an event; a virtual director that automatically determines which view of said multiple cameras of different types to display; a server capable of recording and broadcasting the captured sub-events; and one or more clients in network connection with said server that view portions of the captured event."

(emphasis added)

It is well settled, and defined in the MPEP, that to establish a *prima facie* case of obviousness, **the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and a reasonable expectation of success must both be found in the prior art, and not based on Appellant's disclosure.** *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). See MPEP § 2143 - § 2143.03. The initial burden is on the examiner to provide some suggestion of the desirability of doing what the inventor has done. "To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." *Ex parte Clapp*, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985). See MPEP § 2144 - § 2144.09.

The applicants further contend that there is no motivation to combine the teachings of Taylor into Ippolito. Specifically, Ippolito discloses a video conferencing apparatus for facilitating a video conference involving a group of participants who are azimuthally located about the apparatus. Ippolito's invention identifies a principle speaker via electronic processing of audio signals generated

by the group participants and positions of the video camera so as to capture a frontal image of the principle speaker through electromechanical means. (Abstract, FIGs. 3 and 8) In Taylor image data captured from cameras around the periphery of the room (FIG. 1) is processed to determine the three-dimensional position and orientation of each person's head and to determine at whom each person is looking. The sound data is processed to determine the direction from which the sound came. Processing is carried out to determine who is speaking by determining which person has his head in a position corresponding to the direction from which the sound came. Image data to be archived is chosen by selecting the camera which best shows the speaking participant and the participant to whom he is speaking. (Abstract) But requiring Taylor's additional peripheral cameras around the room to determine which data to record in Ippolito would be prohibitively expensive and needlessly increase the complexity of processing in Ippolito. There would be no motivation to combine Ippolito and Taylor.

In view of the lack of a prima facie case of obviousness the rejected claims are patentable under 35 USC 103 of Ippolito in view of Taylor. It is, therefore, respectfully requested that the rejection of Claims 1-3, 7, 9-12, 14, 15, 20, 21 and 55-56 be reconsidered.

The 35 USC 103 Rejection of 4-6 and 8.

Claims 4-6 and 8 were rejected under 35 USC 103(a) as being unpatentable over Ippolito in view of Taylor and in further view of Liu et al., U.S. Patent No. 6,839,067 (herein after Liu). The Examiner stated that Ippolito and Taylor teach the applicants' claimed invention, but do not teach a stitcher that stitches images together. However, the Examiner further contended that Liu teaches this feature, rendering the applicants' claimed invention obvious. The applicants respectfully disagree with this contention of obviousness.

As discussed above, the applicants claim a Distributed Meeting (DM) system that provides high quality two-way conferencing and recording of meetings, as well as rich browsing of archived meetings enhanced through a number of analysis

techniques. The system uses a variety of capture devices (360° omni-directional camera, whiteboard camera, presenter view camera, remote view camera, microphone devices and arrays and a graphics capture device) to give a rich experience to local and remote meeting participants. These capture devices are all synchronized to provide an integrated, scalable system and method for two-way conferencing, broadcasting, recording and viewing meetings or other events. The DM system and method can also include a virtual director module that automatically switches between the aforementioned cameras of different types to display a meeting-appropriate view of a speaker or other meeting data.

As discussed above neither Ippolito nor Taylor teach the applicant's claimed **multiple cameras of different types simultaneously capturing images of sub-events occurring in a space associated with an event; or a virtual director that determines which view of the multiple cameras of different types to display, and switches between the multiple cameras of different types to display a view of one of the different sub-events.**

Liu teaches a method and apparatus for providing multi-resolution video to multiple users under hybrid human and automatic control. Initial environment and close-up images are captured using a first camera and a PTZ camera. The initial images are then stored in memory. Current environment and close-up images are captured and then an estimated difference between the initial and current images and the true image is determined. The estimated differences are weighted and compared and the stored images are updated. A close-up image is then provided to each user of the system. The close-up camera is then directed to a portion of the environment image having high distortion, and current environment and close-up images are captured again. (Abstract) However, Liu does not teach the applicant's claimed **multiple cameras of different types simultaneously capturing images of sub-events occurring in a space associated with an event; or a virtual director that determines which view of the multiple cameras of different types**

to display, and switches between the multiple cameras of different types to display a view of one of the different sub-events.

Since neither Ippolito nor Taylor nor Liu teaches the applicant's claimed teach the applicant's claimed multiple cameras of different types simultaneously capturing images of sub-events occurring in a space associated with an event; or a virtual director that determines which view of the multiple cameras of different types to display, and switches between the multiple cameras of different types to display a view of one of the different sub-events, the combination does not teach it. Thus, the applicants have claimed elements not taught in the cited art and which have advantages not recognized therein. Accordingly, no prima facie case of obviousness has been established in accordance with the holding of *In Re Fine*. This lack of prima facie showing of obviousness means that the rejected claims are patentable under 35 USC 103 over Ippolito in view of Taylor. Additionally, as discussed above there is no motivation to combine Ippolito and Taylor due to increased cost and complexity. It is, therefore, respectfully requested that the rejection of Claims 4-6 and 8 be reconsidered based on the above quoted claim language.

The 35 USC 103 Rejection of Claim 13, 19 and 51-54.

Claims 13, 19 and 51-54 were rejected under 35 USC 103(a) as being unpatentable over Ippolito in view of Taylor and in further view of Rodriguez, Jr. et al., U.S. Patent No. 6,179,426 (herein after Rodriguez). The Examiner stated that Ippolito and Taylor teach the applicants' claimed invention, but do not teach a stitcher that stitches images together. However, the Examiner further contended that Rodriguez teaches this feature, rendering the applicants' claimed invention obvious. The applicants respectfully disagree with this contention of obviousness.

As discussed above neither Ippolito nor Taylor teach the applicant's claimed multiple cameras of different types simultaneously capturing images of sub-

events occurring in a space associated with an event; or a virtual director that determines which view of the multiple cameras of different types to display, and switches between the multiple cameras of different types to display a view of one of the different sub-events. Rodriguez also does not teach these claimed features.

Since neither Ippolito nor Taylor nor Rodriguez teaches the applicant's claimed multiple cameras of different types simultaneously capturing images of sub-events occurring in a space associated with an event; or a virtual director that determines which view of the multiple cameras of different types to display, and switches between the multiple cameras of different types to display a view of one of the different sub-events, the combination does not teach it. Thus, the applicants have claimed elements not taught in the cited art and which have advantages not recognized therein. Accordingly, no prima facie case of obviousness has been established in accordance with the holding of *In Re Fine*. Additionally, there is no motivation to combine Ippolito with Taylor because this combination, as discussed above. This lack of prima facie showing of obviousness means that the rejected claims are patentable under 35 USC 103 over Ippolito in view of Taylor and Rodriguez. It is, therefore, respectfully requested that the rejection of Claims 13, 19 and 51-54 be reconsidered based on the above quoted claim language.

The 35 USC 103 Rejection of Claim 18.

Claim 18 was rejected under 35 USC 103(a) as being unpatentable over Ippolito in view of Taylor and in further view of Tosaya, U.S. Patent No. 6,549,230 (herein after Tosaya). The Examiner stated that Ippolito and Taylor teach the applicants' claimed invention, but do not teach an event kiosk that is located on one of multiple cameras. However, the Examiner further contended that Tosaya teaches this feature, rendering the applicants' claimed invention obvious. The applicants respectfully disagree with this contention of obviousness.

As discussed above neither Ippolito nor Taylor teach the applicant's claimed multiple cameras of different types simultaneously capturing images of sub-events occurring in a space associated with an event; or a virtual director that determines which view of the multiple cameras of different types to display, and switches between the multiple cameras of different types to display a view of one of the different sub-events. Tosaya also does not teach these claimed features.

Since neither Ippolito nor Taylor nor Tosaya teaches the applicant's claimed multiple cameras of different types simultaneously capturing images of sub-events occurring in a space associated with an event; or a virtual director that determines which view of the multiple cameras of different types to display, and switches between the multiple cameras of different types to display a view of one of the different sub-events, the combination does not teach it. Thus, the applicants have claimed elements not taught in the cited art and which have advantages not recognized therein. Accordingly, no prima facie case of obviousness has been established in accordance with the holding of *In Re Fine*. Additionally, there is no motivation to combine Ippolito with Taylor because this combination, as discussed above. This lack of prima facie showing of obviousness means that the rejected claims are patentable under 35 USC 103 over Ippolito in view of Taylor and Tosaya . It is, therefore, respectfully requested that the rejection of Claim 18 be reconsidered based on the above quoted claim language.

The 35 USC 103 Rejection of Claims 69 and 72

Claims 69 and 72 were rejected under 35 USC 103(a) as being unpatentable over Ippolito in view of Tosaya. The Examiner stated that Ippolito teaches the applicants' claimed invention, but does not teach a 360-degree camera that includes an integrated computer that performs processing required to broadcast images and associated meeting data. However, the Examiner further contended that Tosaya

teaches this feature, rendering the applicants' claimed invention obvious. The applicants respectfully disagree with this contention of obviousness.

As discussed above, Ippolito does not teach the applicant's claimed **multiple cameras of different types simultaneously capturing images of sub-events occurring in a space associated with an event.**

Tosaya teaches a portable video conference module supporting a network-based video conference comprising a processor, a video camera, and audio input device and several interfaces coupled to the processor. The processor includes a local instruction processor accessing a local non-volatile memory. The interfaces include a wireless data capture interface, a video display interface, an audio output interface and a network interface. But Tosaya does not teach the applicants' claimed **multiple cameras of different types simultaneously capturing images of sub-events occurring in a space associated with an event.**

Since neither Ippolito nor Tosaya teaches the applicant's claimed **multiple cameras of different types simultaneously capturing images of sub-events occurring in a space associated with an event,** the combination does not teach it. Thus, the applicants have claimed elements not taught in the cited art and which have advantages not recognized therein. Accordingly, no prima facie case of obviousness has been established in accordance with the holding of *In Re Fine*. This lack of prima facie showing of obviousness means that the rejected claims are patentable under 35 USC 103 over Ippolito in view of Tosaya. It is, therefore, respectfully requested that the rejection of Claims 69 and 72 be reconsidered based on the above quoted claim language.

The 35 USC 103 Rejection of Claims 70 and 71.

Claims 70 and 71 were rejected under 35 USC 103(a) as being unpatentable over Ippolito in view of Taylor and in further view of Tosaya and Rodriguez. The Examiner stated that Ippolito and Tosaya teach the applicants' claimed invention, but do not teach that the system comprises a whiteboard camera for capturing image sof

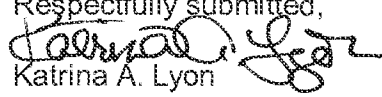
contents written on a whiteboard and a presenter camera for capturing images of an overview of the meeting room. However, the Examiner further contended that Taylor and Rodriguez teach this feature, rendering the applicants' claimed invention obvious. The applicants respectfully disagree with this contention of obviousness.

As discussed above, neither Ippolito nor Taylor nor Tosaya nor Rodriguez teach the applicant's claimed **multiple cameras of different types simultaneously capturing images of sub-events occurring in a space associated with an event; or a virtual director that determines which view of the multiple cameras of different types to display, and switches between the multiple cameras of different types to display a view of one of the different sub-events.**

Since neither Ippolito nor Taylor nor Tosaya nor Rodriguez teach the applicant's claimed **multiple cameras of different types simultaneously capturing images of sub-events occurring in a space associated with an event; or a virtual director that determines which view of the multiple cameras of different types to display, and switches between the multiple cameras of different types to display a view of one of the different sub-events,** the combination does not teach it. Thus, the applicants have claimed elements not taught in the cited art and which have advantages not recognized therein. Accordingly, no prima facie case of obviousness has been established in accordance with the holding of *In Re Fine*. Additionally, there is no motivation to combine Ippolito with Taylor, as discussed above. This lack of prima facie showing of obviousness means that the rejected claims are patentable under 35 USC 103 over Ippolito in view of Taylor and Tosaya and Rodriguez. It is, therefore, respectfully requested that the rejection of Claims 71 and 72 be reconsidered based on the above quoted claim language.

In summary, it is believed that the claims 1-21, 51-61 and 69-72 are in condition for allowance. Allowance of these claims at an early date is courteously solicited.

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